2025-2026 FALL SEMESTER
SENG479 GAME PROGRAMMING

Final

It is the STUDENT'S RESPONSIBILITY to read and follow these instructions carefully.

Project Overview

Students will work groups to develop a complete, playable game using the Raylib library with either C or C++. The project must demonstrate understanding of game programming concepts covered throughout the course, including game loops, rendering, input handling, collision detection, and game state management.

The project period begins with the release of these instructions and ends on the submission deadline, which will be announced on MS Teams. No additional time will be granted.

Technical Requirements

The game must be developed using **Raylib** with either **C or C++**. You may use additional single-header libraries only with prior instructor approval. Don’t forget to upload your project as Visual Studio Solution for me to run them. The game must maintain a minimum of **60 frames per second** during normal gameplay.

Your project must be organized across **multiple source files**. Placing all code in a single file is not acceptable. Functions must have clear, descriptive names, and complex logic must include explanatory comments.

Submission Requirements

You must submit your project as a GitHub repository. Create a new repository using the format GroupID-LastName-FirstName-ProjectName (for example, 1-Smith-John-TowerDefense). The repository must be set to private, and you must add me as a collaborator.

My GitHub Profile: https://github.com/batuhanhangun

Your repository must contain the following:

All source code files organized in a logical folder structure. All asset files (images, sounds, fonts) placed in an appropriate assets folder. A README.md file at the root with build instructions, gameplay explanation, controls, and credits for any external assets. A GDD.md file (Game Design Document) at the root describing your game's design, mechanics, and creative vision. A .gitignore file appropriate for C or C++ projects.

Your final commit must include a compiled executable in a "build" or "bin" folder, or your README must include exact compilation instructions that work on lab machines. In addition, add your project as Visual Studio Solution.

Submit the link to your repository through the course learning management system (MS Teams Assignment) before the deadline.

Commit History

Your commit history is part of your submission. You are expected to make **regular commits** throughout the development process that show incremental progress. Repositories with only one or two commits containing the entire project will be **flagged for review**, as this does not demonstrate a healthy development process.

Meaningful commit messages that describe what was changed are expected. Commits should reflect the natural progression of development, not a single bulk upload at the end.

Game Design Document (GDD)

As part of your submission, you must create a Game Design Document that describes your game's design, mechanics, and creative vision. You are free to choose any format for your GDD (traditional document, wiki-style, visual diagrams, etc.), but it must address the following content areas:

Game Overview: Brief description of your game including genre, theme, and core concept.

Gameplay Mechanics: How your game plays, what the player can do, and how systems interact.

Game Elements: Documentation of specific elements (enemies, items, levels, etc.) and their purposes.

Progression and Goals: How the player progresses, win/lose conditions, and difficulty progression.

Controls: Complete list of player controls and input methods.

Visual and Audio Style: Description of aesthetic choices and creative direction.

Design Challenges and Solutions: Reflection on at least one significant design challenge and how you resolved it.

Your GDD should be written as you develop the game, not as an afterthought. Documents that appear to be reverse engineered from finished code will be viewed skeptically.

External Resources

You may use royalty-free art and audio assets from legitimate sources. The following websites provide free game assets:

Graphics: https://opengameart.org, https://itch.io/game-assets/free, https://kenney.nl/assets

Sound Effects: https://freesound.org, https://opengameart.org

Fonts: https://fonts.google.com, https://www.dafont.com

All external assets must be credited in your README.md file with the source URL and license information.

Academic Integrity

All code must be your own original work. You may reference Raylib documentation and official examples. You may discuss general concepts with classmates, but you may **not share code**. Any external code snippets must be cited in comments with the source URL.

Each submission will be checked for code similarity using plagiarism detection tools. Submissions with high similarity to other students' work or online sources will be treated as copies, and the relevant disciplinary process will be initiated.

Similarly, submissions will be tested for AI generation. Using LLM-based code generators (such as ChatGPT, GitHub Copilot, or similar tools) to produce substantial portions of your code is **not permitted**. Submissions found to be primarily written with AI-assisted tools will be subject to the disciplinary process as per university regulations.

Permitted Use of AI

You are permitted to use AI tools for secondary tasks, such as checking the grammar of your documentation, understanding error messages, or learning about general programming concepts. You must not use AI to generate game logic, system implementations, or significant code structures.

Violations of academic integrity will result in a **zero grade** and referral to academic affairs.

Questions

If you have any questions, please contact me via MS Teams private message or by email at batuhan.hangun@ankarabilim.edu.tr. If the question is not completely private, please ask in the Q&A section of our Team's group so that all students can benefit from the answer.

If emailing, please use the subject line "SENG479 – Game Programming" and include your Name, Student ID, and Department in your message.

Good Luck,

Lect. Batuhan Hangün